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Calendar

Fri., June 1
3:30 p.m.

 DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over

4:00 p.m.

 Joint Experimental-Theoretical
Physics Seminar - 1 West
Speaker: G. Zeller, Columbia
University

 Title: Neutrino Cross Section
Physics: Past, Present and
Future

May 30 - June 3

NuInt07

 Fifth International Workshop
on Neutrino-Nucleus
Interactions in the Few-GeV
Region

[Click here](#) for more information.

Mon., June 4
3:30 p.m.

 DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over

4:00 p.m.

 Joint Experimental-Theoretical
Physics Seminar - One West
Speaker: G. Zeller, Columbia
University

 Title: Neutrino Cross Section
Physics: Past, Present and
Future

[Click here](#) for NALCAL,
a weekly calendar with links
to additional information.

Weather


Chance of
Thunderstorms 81°/61°
[Extended Forecast](#)
[Weather at Fermilab](#)

Current Security Status

[Secon Level 3](#)

Wilson Hall Cafe

Feature

EG&G leads review of LHC triplet design-build process



First row, left to right: John Mammosser, JLAB; Louis Tucciarone, URS; Bob Grant, FRA. Second row, left to right: Bruce Strauss, DOE; Louis Smith, EG&G; Jeff Cotton, EG&G; Jim Eckhardt, URS; Gordon Kennedy, EG&G.

While repair efforts get underway on the LHC triplets at CERN, Fermilab is taking action at home to analyze and understand the causes of the triplet failure. A review team led by EG&G, a division of the engineering firm URS, will examine the design-build process with the goal of ensuring that such failures don't happen again.

"Part of repairing the triplets is learning what went wrong," said Fermilab Director Pier Oddone. "By reviewing the process of building the LHC components, we will find out where we need to change."

For the next 12 weeks, a jointly appointed team of experts in high-energy physics, project management, engineering process improvement and quality assurance will meet on- and off-site to conduct interviews and review documentation. Team members will review the entire LHC project from inception to conclusion. Fermilab hosted the team from May 29-31 to begin the review process.

"We take this review very seriously," said EG&G representative Louis Smith, the team's leader. "We look forward to providing this service to Fermilab and appreciate the confidence in us to get the job done."

Oddone, Smith, and members of Fermilab management stressed the process review's intention to improve engineering practices at

Update

LHC triplet repairs underway at CERN



Pieces for the assembly of cartridges for triplet repair have begun to arrive at CERN, including aluminum outer tubes and Invar rods that fit into the tubes. At right is one of the new heat exchangers installed in the triplet magnets. (Image courtesy of Peter Limon.)

Scientists, engineers and technicians from CERN, Fermilab, Lawrence Berkeley National Laboratory and Japan's KEK laboratory have begun repairs to the "triplet" components of the Large Hadron Collider that failed a pressure test in the LHC tunnel in March.

Following a mechanical review at CERN of the triplets and the proposed fixes on April 24 and 25, Fermilab also conducted a review of the magnet fixes on May 16-17, and of the repairs to the cryogenic and power distribution boxes, or DFBXs, on May 24. All reviews concurred with the design choices for triplet repairs and recommended areas for further investigation and testing to forestall any potential problems.

As described in the May 11 Update, a set of four metal cartridges will be installed in each of 18 quadrupole magnet assemblies to reinforce the internal support structures that broke in one such magnet during the pressure

Friday, June 1

- Beef pepper pot
- Buffalo chicken wings
- Cajun breaded catfish
- Sweet & sour pork over rice
- Honey mustard ham & swiss panini
- Assorted pizza slices
- Carved turkey

***Carb Restricted Alternative**

[Wilson Hall Cafe Menu](#)

Chez Leon**Wednesday, June 6****Lunch**

- Salad nicoise w/fresh grilled tuna
- Pear tart

Thursday, June 7**Dinner**

- Crepes w/black forest ham & gruyere
- Sea scallops
- Spinach w/garlic & pine nuts
- Rhubarb soufflé w/ginger

[Chez Leon Menu](#)

Call x4598 to make your reservation.

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Fermilab.

"The review is straightforward and will be conducted in a professional manner," said Jeff Cotton, a team member and EG&G's onsite contract manager. "This is purely a process review to pinpoint the causes that allowed Fermilab to get into this situation. It is not a search for a guilty party."

The review will culminate with a briefing and presentation of a final report for Fermilab's consideration. EG&G will suggest current practice modifications to reduce the likelihood of recurrence.

"The lessons learned from this review should result in a stronger institution and prepare us to manage future international efforts at Fermilab," said Cotton.

Feature**Accelerator Physics Center to forge Fermilab future**

From left to right: Argonne Accelerator Systems Director Rod Gerig, AD's Vladimir Shiltsev, Fermilab Deputy Director Young-Kee Kim and Steve Holmes, Associate Director for Accelerators celebrate the opening of the Accelerator Physics Center at Fermilab.

A champagne celebration and a Noah's Ark comparison yesterday marked the launch of what Fermilab's accelerator scientists hope will be the foundation for the lab's future. The new Accelerator Physics Center will begin its work on accelerator research and development today.

"The Fermilab accelerator-based program is approaching troubled waters. In a few years, Tevatron Collider Run II operations will wind down slowly, so Fermilab decided to equip some kind of Noah's Ark," said Vladimir

test.

Materials for the cartridges have arrived at CERN, where tests of individual cartridge components and joints are underway. Following assembly and testing of the cartridges, they will be installed in a triplet quadrupole magnet currently in a surface building at the laboratory. Engineers will use a hydraulic device to simulate the asymmetric forces applied to the magnet during a pressure test. After the hydraulic test has shown that the cartridges in fact keep the magnet from moving, as they are designed to do, cartridges will be installed in the remaining triplet magnets. Most of the installation work will be done without removing the magnets from the LHC tunnel.

The March pressure test also revealed minor design problems in the triplets' DFBX's, for which fixes have been designed, reviewed, and agreed on. Parts are being made and tested, and plans call for repairs to begin in mid-June.

Analysis of the pressure-test forces has also shown that stands for the triplets could fail under certain conditions. Engineers have designed modifications to the attachment to the tunnel floor and will test them at the same time as the cartridge test.

At Fermilab, a review of the root causes of the triplet failure began on May 29. Fermilab expects the review, which is being conducted by EG&G, a management consultant under contract to Fermilab, to produce a report in about eight weeks.

[Read more](#)

In the News**From *LNGS Press Release*, May 29, 2007:****Borexino experiment begins data taking**

The Borexino detector for low-energy solar neutrino studies has been completely filled (May 15th) with highly purified scintillator and high purity shielding liquids (pseudocumene and water) and is now fully operational at the Laboratori Nazionali del Gran Sasso. This achievement became reality after several years of technical developments (leading to background radioactive levels then never achieved before), of construction and commissioning and through the solution of several problems involving the underground

Shiltsev. "My job is to captain the boat to the promised land."

Shiltsev will direct the new Accelerator Physics Center. Through efforts at the APC, Shiltsev hopes that Fermilab will be able to develop modern simulation tools and improve beam theory; to conduct experimental accelerator research for muon colliders and high-intensity neutrino sources; and to come up with new methods for advanced accelerator research and development.

"There really is a need to get an acceptable focus on accelerator R&D, and the Accelerator Physics Center is our attempt to do that - to get a dedicated core of people to think about accelerator research and development full-time, and to have a home for those who are still involved in operations but want to dedicate a fraction of their time to accelerator R&D," said Steve Holmes, associate director for accelerators.

The APC will provide a physical location and an organizational structure for Fermilab accelerator scientists and engineers as well as collaborators from other institutions. More than 40 Fermilab employees will transfer to the APC from their positions in the Accelerator, Particle Physics and Technical Divisions to focus solely on accelerator research and development. Shiltsev also expects the APC to become part-time home to 40-50 collaborators.

Another goal of the APC is training the next generation of accelerator scientists. The new Center will host the US Particle Accelerator School. It will provide the opportunity to expand the current PhD program for students interested in accelerator physics. This effort is a collaboration between Fermilab and Argonne, and talks have already begun between the two labs and universities in Northern Illinois. Currently, there are eight students involved in the PhD program, a number that Fermilab's Deputy Director Young-Kee Kim - one of initiators of the Center - hopes can rapidly expand to at least 20.

The new Center physically resides on the 12th and 13th floors of Wilson Hall, although it will involve experimental facilities all over the site, including the Muon Test Area, the Meson Detector Building and the New Muon Lab. For more information on the APC, visit the Center's [web site](#).

-- Rhianna Wisniewski

laboratory and the local authorities, which caused to the experiment three years of stop (mostly due to worries for environmental damages).

The main goal of Borexino is the measurement of the monoenergetic (862 keV) Be-7 solar neutrinos, a central feature in the on-going story of solar neutrinos and neutrino oscillations. Borexino will accomplish this goal by detecting neutrino-electron scattering events taking place in real time in its well shielded 100 tonnes mass fiducial volume.

[Read More](#)

Announcements

Pine Street closures Monday and Tuesday

On Monday and Tuesday, June 4 and 5, utility trenching and pavement marker installation activities will require partial closures of Pine St. Inbound Pine St. will be closed Monday from 8:00 a.m. until 6:00 p.m. On Tuesday, outbound Pine St. will be closed from 7:30 a.m. until 5:00 p.m. Weather conditions could alter this schedule. Check *Fermilab Today* for weather-related schedule changes. Please use the Wilson St. gate as the detour route. Notice and detour signs will be posted.

Outreach workshop on June 5

The Fermilab Users' Organization will host an Outreach Workshop on June 5, 2007, the day before the Users meeting. The workshop will be held from 9:00 a.m. to 5:00 p.m. in One West. It is an opportunity to exchange ideas on effective and practical ways to communicate the exciting ideas of physics. [Click here](#) for more information.

Bob Betz memorial symposium

A memorial celebration of the life of Dr. Robert F. Betz and his lasting influence on Fermilab and the region will take place on Saturday, July 7, at 2 p.m. in Ramsey Auditorium. The event will highlight the great contributions that Bob made to prairie conservation and restoration in Illinois, in particular his work at Fermilab and its National Environmental Research Park. Please RSVP to x5422. [Click here](#) for more information.

DASTOW 2007

On June 21, Fermilab will hold this year's Daughters and Sons to Work day (DASTOW). Please check the [DASTOW Web site](#) for more information.

Nobel Laureate George Smoot lecture

ILC Newsline

ILC industry thinks outside the box



FALC has commissioned a study on the technical benefits of the ILC, something that will push scientists to think outside the box.

What do the International Linear Collider and nuclear waste transmutation, cargo inspection or food and water sterilisation have in common? Technology. The same technology that the ILC will use to explore the fundamental nature of the universe may also have potential applications in other areas of science and industry. This is what a group of ILC scientists and industry met to discuss at an ILC Technical Applications Workshop on 15 May in Dulles, Virginia.

-- *Elizabeth Clements*

[Read more](#)

Wednesday

On Wednesday, June 6 at 8 p.m. 2006 Nobel Laureate George Smoot will give a talk, titled "Relics of Creation: The Big Bang, the COBE Satellite and the Cosmic Microwave Background." This Lecture Series event is sponsored in conjunction with the Fermilab Users Organization. Tickets are \$5 and are can be purchased by calling 630/840-ARTS (x2787) weekdays between 9 a.m. and 4 p.m. For more information, visit the Lecture Series [web site](#).

Classifieds

New [classified ads](#) have been posted on *Fermilab Today*.

[Additional Activities](#)